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PLANT INDUSTRY

WEEKLY STATION REPORTS

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BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

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REPORT FOR THE MONTH OF FEBRUARY, 1933.

HAVRE:

With a mean temperature of 16°, the month of February was 2.4° warmer than the normal. There was one period of ten days, from the 6th to the 16th, of rather extremely cold weather with the minimum temperatures below zero and an extreme low of -31° on the 7th. The maximum for that day was -12°. The maximum for the month was 57°. There was six inches of snow during the month, but the measured precipitation was only 0.19 inch, which was less than half the normal. Aside from a few drifts, there was no snow cover at the end of the month. The wind velocity for the month was the highest on record for this station with an average of 10.4 miles. Soil drifting occurred on three different times but was not especially serious on the station. Conditions have not been especially favorable for winter wheat. At present, it shows none too much vigor, with apparent killing in extreme exposure. The stand of winter wheat will depend on the weather during March and April. Condition of livestock is fairly good. There was more than the usual amount of winter range and a large supply of feed.

JUDITH BASIN:

The coldest weather since 1929 prevailed during the first half of February. There were frequent snows with several days of strong winds. One of the most severe blizzards in the memory of the old settlers occurred February 7 and 8. Temperatures have moderated during the past ten days, and much of the snow has disappeared. However, in many parts of the shelter belt drifts 6 to 8 feet deep still remain. The ground has been frozen during the entire month, and consequently the water from the melting snow has been of little value to crops. The condition of winter wheat on fallow remains questionable. There was very little snow on bare fallow during the time of the coldest weather. There has been no damage from soil blowing since December.

Maximum temperature, 53°; minimum, -32°; precipitation, 0.74 inch.

HUNTLEY:

Low temperatures, heavy snowfall, and wind movement above the average characterized the first half of February. From the 5th to the 14th, below-zero temperatures were recorded every day but one. The minimum for the period was -47°, which was 5° lower than the previous record for this station. Drifting snow seriously hampered transportation facilities and resulted in the suspension of some of the rural mail and school bus services for a week or more. The weather has warmed up gradually since the 15th, until during the last week of the month minimum temperatures were not much below freezing. Nearly all of the snow except that in heavily shaded places has now melted, and most of the moisture appears to have entered the soil, as there has been practically no run-off. Station activities during the month were largely confined to feeding operations, repairing equipment, and cleaning grain.

Maximum temperature, 50°; minimum, -47°; precipitation, 0.96 inch.

SHERIDAN:

February was much colder than is usual here from the 6th to the middle of the month, but during the latter half of the month temperatures were above the average. For the entire month the mean temperature was about 8° below the average of the station for February. In only two years since the station has been operated has the mean temperature for the month been lower than this year. The wind movement was the highest recorded here except in 1918. Precipitation was only slightly above the average, but practically all of the snow was blown into drifts. Fall seedings were mostly bare during the coldest weather. The snow has been melting slowly for the past nine days. The most of the station is now fairly bare of snow except for drifts, and the south slope on the north part of the station where the snow lay deeper than on the most of the remainder of the station. One row of conifers next the caragana in the 1927 planting was completely covered, and only the tops of some of them are now exposed. Run-off has been less than usual in proportion to the amount of snow melted.

Maximum temperature, 48° on the 20th and 21st; minimum, -34° on the 7th; Mean, 15°; precipitation, 0.51 inch.

MANDAN:

Agronomy - The season of 1932 was one of the best for crop production during the history of the station. Practically all crops returned yields above the average. The average yield of wheat was the highest since 1915. The total precipitation for the year was 15.76 inches compared with the average of 16.85 inches for this locality. While the rainfall for the growing season was good and all crops produced above normal, there was a long dry spell from July 5 to October 17, when only 1.66 inches of precipitation fell. The precipitation for October of 2.12 inches was the highest for this month since the station was started in 1913. The following table shows the yields of the principal crops and methods in the main field:

	Yield in bushels per acre			
	Wheat	Oats	Corn	Barley
Average (18 years)	17.4	35.9	28.8	21.4
Average (1932)	27.9	57.1	31.3	31.3
Spring plowing, 1932	26.0	54.7	32.7	32.6
Fall plowing, 1932	24.8	52.5	29.7	31.3
Disked corn ground, 1932	26.7	58.0	--	34.0
Disked potato ground, 1932	35.7	76.9	--	--
Fallow, 1932	33.8	72.2	26.4	39.6
Fallow, (manured) 1932	36.0	77.2	--	--
Fallow, (late plowing) 1932	29.0	--	--	--
Green manured, 1932	30.1	62.9	--	--
Subsoiled, 1932	22.7	42.5	27.0	29.2
Listed, 1932	17.0	39.1	23.4	23.8

Corn variety trials have been conducted since 1915. Only four varieties have been grown in the trials for over 10 years. The following table shows the varieties grown for 10 years, with their yields for 1932 and the averages for the past 10 years. The yields were not as high in 1932 as the yields in the rotations. The soil is not as good on the area where the varieties were grown as it is in the rotations.

Variety	Yield in Bushels per acre 1932	10-yr.ave. (1923-1932)
Dakota White flint	23.7	30.4
Gehu flint	22.4	28.5
Ivory King (flour)	26.1	32.3
Rainbow flint	27.1	32.3
Mercer flint	22.4	26.2
Northwestern-Semi-dent (station strain)	27.0	29.7
Northwestern-Semi-dent (Amenia,N.Dak. strain)	23.8	28.4
Falconer Semi-dent	28.4	30.6
Payne White dent	23.5	29.3
Minn. #13 Yellow dent	18.9	25.3

The past winter in general has been moderate. There were about 10 days of below zero weather in December with two inches of snow. The first half of January was mild, with no below zero temperatures. The last half of January was cold with all minimum temperatures except two below zero, ranging from -2° to -22°. The snowfall for January was 15 inches. There were no severe winds and the snow did not drift badly. February was severely cold during the first 15 days with four maximum temperatures below zero, ranging from -3° to -14°. The minimum temperatures for the 15 days were all below zero, ranging from -3° to -36°. The last 13 days of the month were mild. There was five inches of snow during the month. The snow was nearly all gone at the end of the month, except for large drifts. Water is running in the Heart River, and frost is going out of the surface of the soil. There was a bad storm period during the end of the first week, lasting about four days. The maximum was -12° to -14° for the 6th, 7th, and 8th, and the minimum was -33° to -36° for the same days. There was some snow and high winds. Country roads were badly blocked and loss of livestock was reported from some areas. The combination of snow, extreme cold, and high wind made it the worst storm period within recent years.

Maximum temperature, 52°; minimum, -36°; precipitation, 0.34 inch.

BELLE FOURCHE:

The weather was abnormally cold during the first half of February, but the last two weeks were unusually mild. The temperature dropped from 55° to -10° on February 5, and it remained below zero continuously for a period of three days. Subzero temperatures were recorded on 10 consecutive days, but the weather moderated February 15 and remained mild throughout the balance of the month. The mean temperature for the last half of February was 27° higher than for the first half of February, but the mean temperature for the entire month was 2° below normal. A number of light snows occurred, but measurable amounts of precipitation were received in only two instances. A total of 0.32 inch precipitation has been received since November 1, which is much less than for any other winter on record at this station. The lack of moisture, and occasional high winds have been very unfavorable to fall grain, and the survival of winter wheat and rye is doubtful. The annual Lamb Feeders' Day was held at the station February 15, and the attendance numbered between 75 and 100 people interested in the lamb feeding experiments. S.D.Smith,U.S.Range Livestock Sta.,Miles City,Mont., and A.L.Baker, Ardmore Field Sta., Ardmore,S.Dak., visited the station for about ten days in connection with the lamb feeding experiments.

Maximum temperature, 65°; minimum, -28°; precipitation,0.10 inch.

ARCHER:

The first half of February was very cold. The minimum temperature reached -27° during the night of February 9. Since that date the weather has been milder. The latter part of the month was much like spring, the temperature reaching 55° February 26. The month was rather windy. During February 15 and 22 the wind was very severe and caused the soil from some fields to drift so badly that where it crossed the highway it was difficult to see the road. The soil at the station did not drift to any extent. There has not been sufficient moisture to in any way alleviate the drought which has been holding this section during the last two years. The soil is very dry, which is a factor favorable to soil blowing. Unless considerable spring moisture is received, crop prospects for the year are very poor. The precipitation for February totaled 0.07 of an inch. Work at the station consisted of shelling and weighing the dried corn harvested last fall, repairing and rebuilding machinery, and rebuilding the farmstead road with gravel from the granary basement. The manure from the open cow shed has been hauled away for the third time. A number of State Legislators, State Agricultural Commissioner L.T.Oldroyd, and Director W.L.Quayle visited the station during the month.

AKRON:

February weather was open and clear and favorable for the feeding and maintenance of livestock. The fattening lambs were shipped February 27. The lambs made excellent gains and were in very good condition. Our fifth annual feeders' day was held February 27. Approximately 100 farmers gathered to view the lambs and to hear the results of the lamb feeding experiment. The surface soil is very dry, and as winter wheat made very little top growth in the fall, it appears as if soil blowing may become serious if some precipitation is not received soon. Some soil blowing occurred on farms in this section on February 4, 9, 18, and 19. The fallow soil, bean land, and roads on the station were cultivated with the duckfoot cultivator to prevent soil blowing. February passed with but 0.04 inch precipitation. The maximum temperature for February was 63° on the 23; the minimum was -23° on the 7th.

NORTH PLATTE:

The month has been dry with temperatures averaging somewhat below normal. Precipitation was 0.15 inch, making the total for the four midwinter months only 0.58 inch. This is only 30 per cent of the normal of 1.94 inches for these months. A 5-day period from the 6th to 11th was the most severe so far this winter. Temperatures from -9° to -21° were not so low as those in December, but high winds made heating of buildings difficult and caused greater damage and losses of livestock than during the earlier period. The last half month has been relatively mild, with night temperatures ranging from 12° to 32° and day temperatures from 41° to 63°. The month closes with not enough frost in the soil to hamper field operations, but with both surface and subsoil too dry to be easily tilled or for crops to start if seeded. Kochia has germinated and is making a good growth in irrigation ditches where there is moisture. First growth has started at the base of alfalfa crowns. Winter wheat is in very poor condition and heavy abandonment is certain.

COLBY:

The chief consistent characteristic of the weather for February was that it was dry. Precipitation was recorded on five different dates, but the total was only 0.08 inch. On five different dates it was very windy with some soil blowing. From the 7th to the 12th there was a period of the coldest weather ever experienced at this station. The minimum temperatures ranged between -4° and -25°. On three of these days the temperature did not rise above zero. On the morning of the 9th the minimum was -25°, which is the coldest ever recorded at this station. It is 1° colder than the previous minimum which was recorded last December. With the exception of that cold period, the day temperatures have been rather warm. The condition of the winter wheat crop continues precarious. On all but the summer fallow plots most of the wheat is in practically dry soil, unsprouted. Most of it appears to be undamaged and would probably germinate promptly if there was a sufficiency of moisture. On the summer fallow plots the stand has been thinned out very materially since last fall. There are still many plants alive, but such are few and far between. The soil even on summer fallow is dry and ashy to a depth of from 4 to 6 inches. It is in excellent condition to blow readily. Blowing has not as yet been serious.

Maximum temperature, 71°; minimum, -25°; precipitation, 0.08 inch. Precipitation, 46-year average, 0.61 inch. Total precipitation for 1933 to date, 0.08 inch; 46-year average, 0.38 inch. Total precipitation for the last five months, 1.04 inches.

HAYS:

During February there were two snow storms which measured 0.21 inch water. This made a total of 0.58 inch precipitation since October 22, or in a little more than four months. However, the winter wheat and rye appear in good condition. Both crops are starting new growth after being completely killed to the ground by the severe freezing from February 6 to 11 when the minimum temperature ranged between zero and -23°. No spring tillage work has been started on the project. A little has been done on the commercial fields. If weather remains open, the spring plowing for small grain crops will be done within the next few days. It is anticipated the ground will turn in good condition and will likely provide a better surface soil condition for seeding than the ground plowed late in the fall, as the furrow slice of fall plowing is dry. This ground will need some rain before germination can be expected. A few days during the month this section has been swept by strong winds heavily laden with dust, most of which came from a distance. Considerable damage is being done by soil blowing in some localities, but no soil is moving in this vicinity. For most part this is due to the fact that there has not been sufficient moisture in the surface clod mulch to enable the freezing to mellow the clods. The dry clods remain well intact, which offers excellent protection against soil movement by blowing. A few days during the wind storms, the air was so full of dust there were times when the sun was almost hidden, and driving on the roads was very dangerous, because on-coming cars could not be seen for the dust screen.

TUCUMCARI:

Precipitation for the past two months totals 0.26 inch, snow totaling 0.21 inch falling on Feb. 7, and snow of 0.05 inch being received Feb. 26. February was slightly higher in wind movement than the average February, while the mean temperature of 35° was unusually low. The month opened and closed quite warm, with the coldest five day period on record from the 7th to the 11th, inclusive. Minimum temperature for the month was -16° the morning of the 8th. In the past 28 years there have been only two days with lower reading than this, minimum readings of -17° and -18° recorded in Dec., 1918, and Jan. 1919. From the 7th to 11th of the month minimum termperatures ranged from -16° to -4°, and with the exception of one day the maximum remained below freezing throughout the period. Wind velocity was unusually high in January and slightly lower in February. Due to the dry condition of surface soil, work to prevent soil movement has been relatively unsuccessful. Conditions have remained ideal for soil movement the past two months, and at present fields and tree rows are so lined with cultivator furrows, partially or totally filled with dry sand, that there is little work which can be done to lessen soil blowing until precipitation is received.

Rabbits have continued their attack on treated and untreated evergreens, although injury to deciduous trees has been very slight. Many of the latter have been wrapped with yucca. Spraying or painting with deterrents does not seem effective here. Since late fall, approximately 175 rabbits have been killed on the station, most of them by night hunting in truck. Wheat in eastern New Mexico is fast deteriorating. High winds early in the year caused late planted wheat to blow, and the severe cold immediately following caused additional injury to fields where blowing had occurred. Fields which made considerable fall growth did not blow to any extent and in many cases remain in fair condition. Livestock losses have been light, but condition of stock is rapidly becoming poorer. Stock wintering on the range, with only protein supplement added, seem to be losing flesh fast as a result of high winds and the cold weather early in the month. Range condition is changing from fair to poor. Severe weather in the next six weeks would see extremely heavy losses of stock. Small evergreens planted around buildings show evidence of severe killing back, due to the cold weather. The extent of injury cannot be determined, but seems largely confined to small plants near buildings, while older plants in rows apparently are not injured. The winter-hardiness data which will probably be obtainable this spring may be valuable, but promise to be somewhat discouraging.

BIG SPRING:

Temperature conditions during the month have shown some wide variations. On the night of February 8 a new minimum record for this station or for the town since 1900 when weather records were first obtained here. On this date a minimum of -6° was recorded. There was a period of six days when the minimum did not get above 14°, which is rather unusual for this section. All of the broad leaf evergreens except Mahonia were frozen back in varying degrees. It is hoped that this prolonged cold spell will defer the budding of the fruit trees, most especially peaches, until the blossoms will escape the later freezes. The last half of the month has been unusually free from wind and has been rather mild. Fields to be used for cooperative work have been plowed and an 80-acre increase field has been listed during the month. A block of 464 Arizona Cypress trees was planted and replacements were made of the other varieties of the evergreen block. Other work has consisted of ginning cotton, oiling harness, and repairing machinery.

J.M.Jones, Texas Experiment Station, and E.W.Sheets, Bureau of Animal Industry, were station visitors on February 14.

Maximum temperature, 80°; minimum, -6°; precipitation, 0.79 inch.

DALHART:

The month of February gave the coldest weather of the winter. On two nights the minimum was -10° and on two nights the temperature reached -12°. Apparently no damage was done to the wheat by these below zero temperatures. Trees and vines, except the tips of those plants that usually kill back, are not apparently injured. This continued cold weather has held back bud emergence of fruit and shade trees. This should be of some benefit as the last two years the warm February temperatures have started the buds to swelling and the cold March temperatures have killed the early growth. The soil is also too dry to support early spring growth. The soil is just about as dry as it ever gets. The frequent winds continue to shift the soil.

Maximum temperature, 70°; minimum, -12°; precipitation, 0.02 inch.

LAWTON:

Freezing temperatures of 0°, -2°, and -1°, Feb. 6 to 8 and blowing soil driven by a very high wind produced temporary injury to wheat, killed all of the winter oats, all seedings of winter barley made after October 5, and all spring seedings of oats made previous to Feb. 6. A little snow fell during this early February storm, but it did not form a protective covering because of a north wind of unusually high velocity. The air was filled with sand and dust, and more soil blowing was experienced than at any time in the previous history of the station. Injurious soil blowing occurred on fall plowing and on row stubble land regardless of the surface condition. All uncropped land was thoroughly worked with the spring-tooth harrow as soon as possible to prevent further blowing and to retain a more receptive surface condition for moisture as well. Plant growth of wheat was practically killed back to the surface by blowing sand. Wheat drilled in cotton stalks was badly covered with soil, and a reduction in stand on several of these plots is quite appreciable. All other plots of wheat have made excellent recovery since Feb. 20 and are in good condition at present. Orel was the only winter barley that was entirely killed in the barley variety test. Michigan and Hanriver sustained slightly less injury than Tenn. 66 and Pidor. Good stands of Wisconsin No. 519 appear to survive on seedings made Sept. 15 and 24. The October 5 seedings show a decided reduction in stand and all later seedings were entirely killed. The five varieties of winter oats, Fulghum No. 2498, No. 2499, Custis, Winter Turf, and Nortex No. 2382, seeded Sept. 15, October 5, and October 15 were also entirely killed. Spring seedings of oats made Jan. 25 and 26 were well sprouted previous to the freeze on Feb. 6 to 8 and none of the young seedlings emerged. Seedings made Feb. 6 were showing considerable emergence March 1. All rotation plots and a 10-acre field were reseeded Feb. 24. The variety test will be reseeded as soon as the soil is dry enough. Germination of spring barley seeded Jan. 25 was slower than that of oats, and there is a fair indication that stands may be obtained. However, emergence is very slow. February precipitation was very scant until the latter part of the month when measurements of 0.41 inch on the 24th and 0.53 inch on the 26th and 27th were recorded. The total for the month was 0.96 inch. The mean monthly temperature of 37.6° was 5.4° below the average. The minimum temperature for the month was -2° and the maximum was 77°.

WOODWARD:

Minimum temperatures in this section February 6 to 9 ranged from 1° to -12°. Winter wheat which but recently begun to make rapid growth was frozen to the ground. This was true over a very large part of the adjacent parts of Kansas and Texas. This freeze apparently did no permanent injury to the wheat, as by March 1 it is again making very rapid growth. During January and February the soil has been practically bare and very fine and ashy. Over a great region covering parts of Kansas, Texas, and Oklahoma it has been in the best condition in years to blow, but it has blown little because there have been but few high winds and none excessively high. Last spring it was predicted there would be a light wheat crop, but in many vicinities it was unusually good. It has made very little growth this winter, but with the vigor it is now showing, it might with good spring rains make an excellent crop. On the other hand wheat over the whole surrounding territory might be wiped out by one high wind. The fruit buds on peaches, apricots, and plums were mostly killed by low temperatures over past month. The work of the month has been pruning fruit trees, packing trees for shipment in windbreak work, pruning grapes, getting seed ready for sale, and terracing a 25-acre field that has washed badly over the past two years.

Maximum temperature, 74°; minimum, -12°; precipitation, 0.52 inch.

DICKINSON:

A feature of the February weather was a blizzard on the 8th, 9th, and 10th, with extreme cold and high wind. A minimum for the winter of -37° was recorded on the morning of the 7th. On the following three mornings -36°, -34°, and -13° were recorded. About six inches of loose snow lay on the ground when the wind started. This filled the air for three days and was badly drifted. Moderate temperature prevailed during the last half of the month, and the mean temperature for the whole month was only slightly below normal. Although most of the snow in the open fields had melted by the end of the month, some high drifts were left; where the snow had blown away the ground froze deeply so that the water line was frozen at the end of the month. Precipitation during February amounted to 0.35 inch. For the five months, October to February, the snowfall amounted to 32.9 inches or almost twice the average for these five months. The winter has been rather severe on livestock and roughage is now becoming scarce.

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